

ABSTRACT

The proposed thin-film deposition device comprises a processing chamber, and the processing chamber includes: N processing stations distributed in a regular polygonal distribution, for performing thin-film deposition, wherein N is greater than or equal to 3; N process robots, respectively disposed between two adjacent processing stations, for transferring a substrate between two adjacent processing stations; one end of each process robot being rotatably connected to the processing chamber, and the rotary joint being located on the perpendicular bisector plane of the line connecting the centers of two adjacent processing stations. The process robots transfer a substrate among a plurality of processing stations, so that the region on the substrate close to the center of the processing chamber changes after the transfer; therefore, thin films deposited at the plurality of processing stations can produce a compensation effect, improving the uniformity of multi-layer thin-films deposited on the substrate, avoiding the phenomenon that etched through-holes deviate from the vertical direction during the subsequent etching process of the thin films deposited on the substrate, and thereby further ensuring the performance stability of semiconductor devices.